

1 14. The audio speaker of claim 1 wherein:  
2 the magnet comprises an external ring magnet.

1 15. The audio speaker of claim 14 wherein:  
2 the first magnetically conductive member comprises a top plate.

1 16. The audio speaker of claim 14 wherein:  
2 the first magnetically conductive member comprises a pole plate.

1 17. The audio speaker of claim 16 wherein:  
2 the pole plate comprises a laminated pole piece and a monolithic back plate coupled to the  
3 laminated pole piece.

4 18. The audio speaker of claim 16 wherein:  
5 the second magnetically conductive member comprises a top plate which is comprised of a  
6 plurality of laminated layer sections which are magnetically coupled to but electrically insulated  
7 from each other.

1 19. The audio speaker of claim 1 wherein:  
2 the magnet comprises an internal magnet.

1 20. The audio speaker of claim 19 wherein:  
2 the first magnetically conductive member comprises a top plate.

1 21. The audio speaker of claim 20 wherein:  
2 the first magnetically conductive member comprises a cup.

1 22. The audio speaker of claim 21 wherein:  
2 the second magnetically conductive member comprises a top plate which is comprised of a  
3 plurality laminated layer sections which are magnetically coupled to but electrically insulated from  
4 each other.

1 23. The audio speaker of claim 1 wherein:  
2 the magnet comprises an internal magnet; and  
3 one of the first magnetically conductive member and the second magnetically conductive  
4 member comprises a tube yoke.

1 24. The audio speaker of claim 23 wherein:  
2 the second magnetically conductive member comprises the tube yoke; and  
3 the first magnetically conductive member comprises a pole piece.

1 25. The audio speaker of claim 23 wherein:  
2 the first magnetically conductive member comprises the tube yoke.

1 26. The audio speaker of claim 25 wherein:  
2 the second magnetically conductive member comprises a pole piece which is comprised of a  
3 plurality of laminated layer sections which are magnetically coupled to but electrically insulated  
4 from each other.

1 27. The audio speaker of claim 25 wherein the tube yoke comprises:  
2 a plurality of substantially rectangular laminate layer sections coupled together.

1 28. The audio speaker of claim 27 wherein:  
2 at least some of the substantially rectangular layer sections include holes through which a  
3 bolt may be passed from one layer section to a next layer section along an axis of the tube.

1 29. The audio speaker of claim 28 wherein:  
2 the holes are formed through tabs extending from a main body of the layer section.

1 30. The audio speaker of claim 25 wherein:  
2 the tube comprises a plurality of substantially V-shaped laminate layer sections coupled  
3 together; and  
4 the top plate comprises a plurality of laminate layer sections coupled together .

1 31. The audio speaker of claim 30 wherein the plurality of laminate layer sections of the top plate  
2 comprises:

3 a plurality of one-piece top plate sections; and

4 a plurality of two-piece top plate sections.

1 32. The audio speaker of claim 31 wherein:

2 the one-piece top plate sections and the two-piece top plate sections include corresponding  
3 holes through each, extending along an axis of the tube.

1 33. The audio speaker of claim 23 further comprising:

2 an external magnet magnetically coupled to the tube; and

3 an external top plate magnetically coupled to the external magnet.

1 34. The audio speaker of claim 33 wherein:

2 the external top plate comprises a plurality of laminated layer sections which are  
3 magnetically conductive but electrically insulated from each other.

1 35. The audio speaker of claim 23 further comprising:

2 a collar magnetically coupled to the tube and defining the magnetic air gap with the pole  
3 piece.

1 36. The audio speaker of claim 23 wherein the tube comprises:

2 shoulders adjacent the diaphragm assembly.

1 37. The audio speaker of claim 1 wherein the second magnetically conductive member comprises  
2 a plurality of laminated layer sections which are magnetically coupled to but electrically insulated  
3 from each other.

1 38. The audio speaker of claim 37 wherein:

2 the laminated layer sections of the first magnetically conductive member are oriented in a  
3 different direction than the laminated layer sections of the second magnetically conductive member.

1 39. The audio speaker of claim 5 wherein:

2 the first magnetically conductive member comprises a second laminated structure in which a  
3 plurality of magnetically conductive sections are mechanically coupled together and electrically  
4 insulated from each other to prevent eddy currents which would otherwise be induced by the  
5 electrical current applied to the voice coil.

1 40. The audio speaker of claim 39 wherein:

2 the magnetically conductive sections of the first laminated structure have a different  
3 orientation than the magnetically conductive sections of the second laminated structure.

1 41. A method of operating an audio speaker to move a diaphragm in response to an alternating  
2 current electrical signal applied to the speaker, the method comprising:

3 (A) conducting magnetic flux from a magnet, thence through a first magnetically conductive  
4 member, over a magnetic air gap, thence through a second magnetically conductive member, and  
5 thence back to the magnet,

6 (B) conducting the electrical signal through a voice coil which is disposed within the  
7 magnetic air gap and wound around a bobbin which is coupled to the diaphragm;

8 (C) in response to the electrical signal being conducted through the voice coil, moving the  
9 voice coil under electromotive force in response to the presence of the magnetic flux across the  
10 magnetic air gap; and

11 (D) substantially preventing eddy current in at least one of the first and second magnetically  
12 conductive members, by virtue of the at least one of the first and second magnetically conductive  
13 members comprising a laminated structure of electrically insulated magnetically conductive sections,  
14 which eddy current would otherwise be induced by the electrical signal being conducted through the  
15 voice coil.

1 42. The method of claim 41 further comprising:

2 holding the laminated structure together with at least one bolt passed through corresponding  
3 holes which extend through the respective electrically insulated magnetically conductive sections.